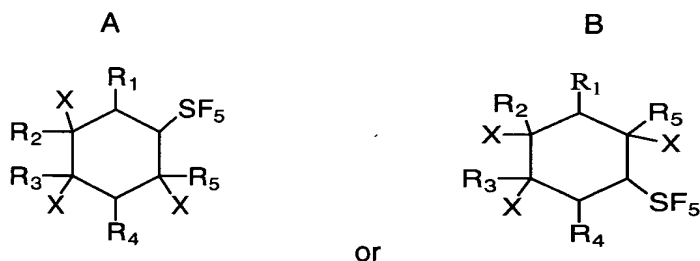
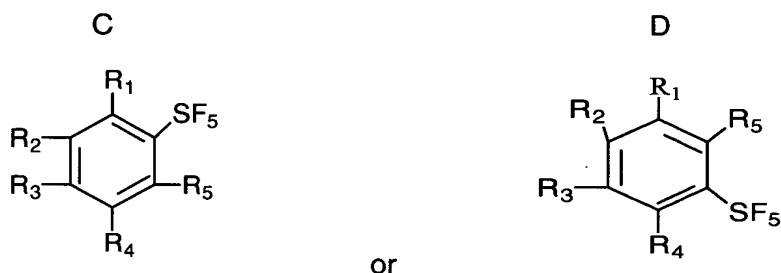


CLAIMS

1. A process for making pentafluorosulfuranyl arylenes which comprises:
 5 effecting dehydrohalogenation or dehydrogenation of a halogenated pentafluorosulfuranyl compound represented by either of the structures:



- 10 to form compounds represented by either of the structures:



- wherein R_{1-5} are H, halogen, e.g., Cl, or Br; C_{1-10} alkyl, C_{1-10} alkoxy, C_{1-10} thionyl, C_{1-10} alkyl ether, aryl and substituted aryl, thioether, sulfonyl, carboalkoxy, alkylamino, arylamino, alkylphosphoryl, alkylphosphonyl, arylphosphonyl, and arylphosphoryl etc and X is a halogen atom.
- 15

2. The process of Claim 1 wherein R_{1-5} are H.
- 20

- 3 The process of Claim 2 wherein X is selected from the group consisting of Br and Cl or a mixture thereof.

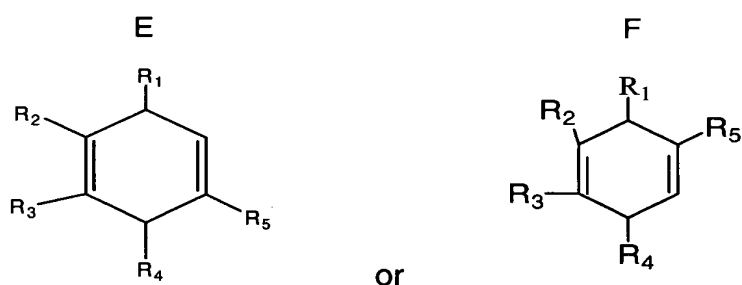
4. The process of Claim 3 wherein compounds C and D are formed by
 25 effecting dehydrohalogenation of compounds represented by the structures A or B.

5. The process of Claim 4 wherein X is bromine.

6. The process of Claim 5 wherein dehydrohalogenation is effected by reaction of compounds represented by the structures represented by the structures A and B with powdered sodium hydroxide.

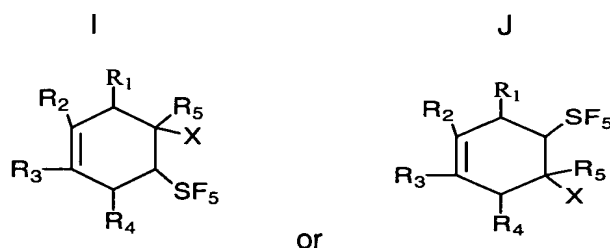
7. The process of Claim 1 wherein the halogenated pentafluorosulfuranyl compounds for forming the pentafluorosulfuranyl arylenes are formed by a two step process which comprises:

10 (a) reacting SF_5X with a compound represented by either of the structures:



leading to the formation of compounds represented by either of the structures:

15



wherein R_{1-5} are H, halogen, e.g., Cl, or Br; C_{1-10} alkyl, C_{1-10} alkoxy, C_{1-10} thionyl, C_{1-10} alkyl ether, aryl and substituted aryl, thioether, sulfonyl, carboalkoxy, alkylamino, arylamino, alkylphosphoryl, alkylphosphonyl, arylphosphonyl, and arylphosphoryl, etc. and X is Br or Cl.

and then,

(b) halogenating the thus formed compounds represented by the structures I and J produced in step (a) by reaction with Cl_2 , Br_2 , or I_2 to form compounds represented by the structures A and B.

8. The process of Claim 7 wherein R_{1-5} are H.

9. The process of Claim 8 wherein step (a) is carried out using SF₅Br as the reactant.

5 10. The process of Claim 9 wherein a free radical initiator is used to catalyze the reaction of SF₅Br with compound represented by the structures E or F.

11. The process of Claim 10 wherein the free radical initiator is triethyl borane.

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12. The process of Claim 11 wherein halogenation in step (b) is carried out using Br₂ as the halogenating agent.

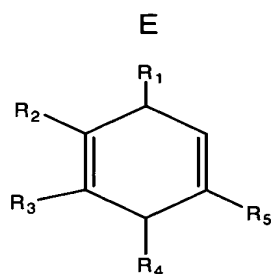
13. The process of Claim 12 wherein compounds represented by the structures C and D are formed by effecting dehydrohalogenation of compounds represented by the structures A and B by reaction with powdered sodium hydroxide.

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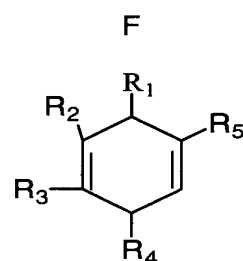
14. The process of Claim 1 wherein the halogenated pentafluorosulfuranyl compounds for forming the pentafluorosulfuranyl arylenes are formed by a two step process which comprises:

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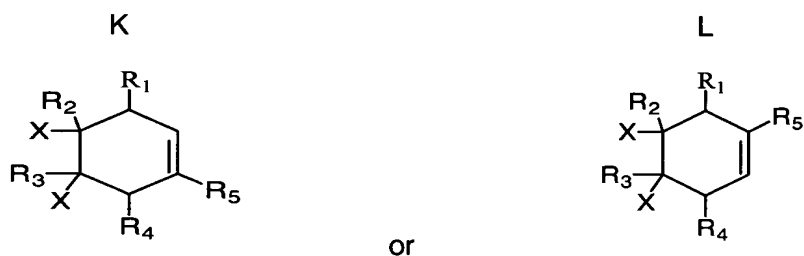
(a) halogenating a compound represented by the structures:



or



25 leading to the formation of compounds represented by the structures:



wherein R_{1-5} are H, halogen, e.g., Cl, or Br; C_{1-10} alkyl, C_{1-10} alkoxy, C_{1-10} thionyl, C_{1-10} alkyl ether, aryl and substituted aryl, thioether, sulfonyl, carboalkoxy, alkylamino, arylamino, alkylphosphoryl, alkylphosphonyl, arylphosphonyl, and arylphosphoryl, etc. and X is Br or Cl.

and then,

(b) reacting the thus formed compounds K and L produced in step (a) by reaction with SF_5X to produce compounds represented by the structures A or B.

15. The process of Claim 14 wherein R_{1-5} are H and X is Br.

16. The process of Claim 15 wherein step (a) is carried out using SF_5Br as the reactant and a free radical initiator is used to catalyze the reaction of SF_5Br with the compounds represented by the structures K or L.

17. The process of Claim 16 wherein the free radical initiator is triethyl borane.

18. The process of Claim 16 wherein C and D are formed by effecting dehydrohalogenation of compounds represented by the structures K and L by reaction with powdered sodium hydroxide.